

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 2 of 14

**REMARKS**

Upon entry of this amendment, claims 1-19 remain in the application.

The Office Action of June 9, 2004 has been received and carefully considered. In response thereto, this Amendment is submitted. It is submitted that, by this Amendment, all bases of rejection and objection are traversed and overcome. Reconsideration is, therefore, respectfully requested.

Additionally, entry and consideration of this Amendment under the provisions of 35 U.S.C. § 116 is earnestly sought. It is submitted that this amendment presents arguments and reasoning that eliminate one or more rejection, thereby placing the Application in a condition suitable for appeal. Entry of this Amendment is therefore requested.

Claims 1, 4, 5, 7-10 and 12-15 currently stand rejected under 35 U.S.C. § 102(b) as being anticipated by Newkirk. The Examiner indicates that the Newkirk reference discloses a nonwoven fabric comprising a carded web layer having an average denier of 3 or greater bonded to a thermoplastic fibrous layer having an average denier of 3 or less (column 2, lines 39-44). The Examiner indicates that the low denier layer of Newkirk meets the Applicants' claim limitations for the upper layer because the claim range at most 3.5 dtx falls within "less than 3 denier" as outlined in Newkirk. The lower denier layer of Newkirk is considered to comprise bicomponent fibers with optionally 30 percent single component fiber (column 3, lines 42-55).

The Examiner indicates that the high denier layer meets Applicants' claim limitations for the lower layer because the claimed range of between 4 and 10 dtx falls within "greater than 3 denier," and the fibers are bicomponent fibers with the higher melting component made of PET (column 3, lines 20-34). The Examiner also indicates that the lower melting parts of the bicomponent fibers are

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 3 of 14

the only ones that melt, thus they would have a lower melting point than the mono-component fibers (column 4, lines 2-6).

The Applicants' invention is a composite material for producing a layer of a disposable absorbent hygienic article that comes into contact with the body. The composite material is made of at least two nonwoven material layers joined by thermal processing. The upper layer configured for physical contact with the body is formed of a mixture of mono-component fibers and bicomponent fibers. The percentage of bicomponent fibers in the upper layer amounts to 30 to 70 percent by weight of that layer. The denier of the fibers in the upper layer is at most 3.5 dtx. The lower layer includes at least 40 percent by weight by component fibers having a higher melting component made of PET. The lower melting component of the bicomponent fibers has a lower melting point than that of the mono-component fibers in the upper layer. The denier of the bicomponent fibers of the lower layer is between 4 and 10 dtx.

It is respectfully submitted that the Newkirk reference fails to teach, suggest, or appreciate a composite material in which the lower layer is composed of bicomponent fibers specifically selected to have a denier between 4 and 10 dtx. At best, the reference teaches that the high loft cover stock is composed of a carded web material in which all fibers, have an average denier of 3 or greater. The reference lacks any teaching of the specific nature of the bicomponent material.

According to the general teaching of Newkirk at column 3, lines 20 to 30, almost any bicomponent fibers can be used. Column 3, line 27 states: "Specific examples of such fibers are 1.7 and 3 denier polyethylene/polyester sheath/core fibers." It is submitted that such teaching leads away from the present invention that requires bicomponent fibers in the lower layer have a thickness of 4 to 10 dtex. The Examiner cites column 2, lines 39-44 and line 54 for the teaching that the fibers have an average denier of 3 or greater does not specifically refer to

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 4 of 14

bicomponent fibers as these materials are specifically defined as having a denier of 1.7 to 3.

It should also be noted that all examples set forth in Newkirk use bicomponent fibers having a denier less than or equal to 3. The examples lack any teaching or suggestion of bicomponent fibers or PET bicomponent fibers between 4 to 10 dtex. In the Newkirk examples no bicomponent fibers have a denier greater than or equal to 3. Thus it is submitted that the Newkirk reference, when read in its entirety, leads away from the use of the bicomponent fibers having a denier of 4 to 10.

Additionally, it is submitted that the Newkirk reference, taken in its entirety, does not teach or suggest that the addition of mono-component fibers into the lower layer together with 3.0 denier or greater bicomponent fiber would lead to a composition such as that set forth in claim 1 in which the lower layer requires bicomponent fibers with a denier of 4-10 dtex. Attention is directed to examples 1, 8, and 9 where bicomponent fibers with PET (polyester) as the higher melting component are used and where mono-component polyester fibers are added. In Example 1, the mono-component polyester fibers have a high denier value, while the bicomponent fibers have a denier of 3. In contrast, the invention as set forth in claim 1 requires that the bicomponent fibers in the lower layer have a denier of 4-10 dtex. Thus, it is submitted that the Applicants' invention as set forth in claim 1 is not taught, anticipated, or rendered obvious by the Newkirk reference.

Claims 4 and 5 currently stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Newkirk reference. Claims 4 and 5 depend from independent claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 4 and 5 is not taught, anticipated, or rendered obvious by the Newkirk reference.

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 5 of 14

Claims 7-10 currently stand rejected under 35 U.S.C. § 102(b) as being anticipated by Newkirk. Claims 7-10 depend either directly or indirectly from claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 7-10 is not taught, anticipated, or rendered obvious by the Newkirk reference for the reasons discussed previously in conjunction with claim 1.

Claims 12-14 currently stand rejected under 35 U.S.C. § 102(b) as being anticipated by Newkirk. Claims 12-14 depend indirectly from claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 12-14 is not taught, anticipated, or rendered obvious by the Newkirk reference for the reasons discussed previously in conjunction with claim 1. Additionally, the Applicants' invention as set forth in claims 12-14 depends directly from claim 11. This claim currently stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Newkirk in view of Lloyd. The Examiner has indicated that the Newkirk reference does not disclose the lower layer to contain eccentric core/sheet fibers. Thus, the Examiner's attention is directed to the analysis of claim 11 presented subsequently in this Amendment. The analysis presented at that point is also considered applicable to the current rejection of claims 12-14 due to the dependency of these claims from claim 11.

Claim 15 currently stands rejected under 35 U.S.C. § 102(b) as being anticipated by Newkirk. Claim 15 depends from claim 1 to specify an absorbent hygienic article with a fluid-tight layer not in physical contact with a body during use. The article includes a retaining element and a fluid-permeable layer furnished on a side of the retaining element in physical contact with the body. The layer furnished on the fluid-permeable side of the retaining element in physical contact with the body comprises the composite material defined in claim 1. Claim 15 depends from independent claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 6 of 14

forth in claim 15 is not taught, anticipated or rendered obvious by the Newkirk reference for the reasons discussed previously in conjunction with claim 1.

Claims 1, 4-10, and 12-15 currently stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Barge et al. The Examiner contends that the Barge reference discloses a composite nonwoven article for controlled acquisition and distribution of a liquid comprising a first support layer and a first bulky layer. The two layers are bonded by thermal bonding. The Examiner indicates that the support layer may function as the cover stock in an absorbent article and would, therefore, be the body contacting layer. The Barge et al. reference is considered to disclose the use of support fibers preferably having a denier of 1.7 to 3.3. The Examiner also indicates that Barge et al. discloses the support layer being made from a mixture of single-component fibers and bicomponent fibers. The Examiner indicates that the Barge reference fails to teach or disclose that the mixture comprises 30 to 70 by weight by component fibers. The Examiner considers the optimum ratio of bicomponent fibers to single-component fibers to be an obvious matter of optimizing a result effect variable. Addition of more bicomponent fibers in the nonwoven article would strengthen the bonding of the fabric at the expense of feel and increased stiffness. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use 30 to 70 percent bicomponent fibers in the support layer of the Barge reference, since the Barge reference discloses using a blend of single-component and bicomponent fibers, and it has been held that discovering optimum value of a result effective variable involves only routine skill in the art. The Examiner further indicates that the bulky layer disclosed in Barge meets the limitation of the lower layer because the Barge reference discloses fibers in the range of 5 to 12 dtx and may consist essentially of bicomponent fibers that contain PET.

U.S. Patent No. 5,989,688 to Barge corresponds to EP 0 859833B1 identified the above-identified application. The Barge reference is directed to a

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 7 of 14

plurality of composite materials with at least two layers of non-woven material used to produce a layer for a hygienic article that comes into contact with the body. The Barge reference is concerned with improving the fluid absorption and distribution characteristics of the composite material as the top sheet in a hygienic article. Two to three-layer composite materials are present in highly varied combinations of layers. As part of these layers, mixtures of synthetic bonding fibers and matrix-forming fibers are utilized. It is respectfully submitted that the Barge reference fails to teach or suggest a composite material for producing a layer of the disposable absorbent hygienic article made of at least two nonwoven material layers joined by thermal processing in which the upper layer is formed of a mixture of mono-component fibers and bicomponent fibers with the percentage of bicomponent fibers amounting to 30 to 70 percent by weight in the upper layer, and where the denier of the fibers in the upper layer is, at most, 3.5 dtx. The material also has a lower layer that includes at least 40 percent by weight of bicomponent fibers having a melting component made of PET and whose lower melting component is lower than the melting point of that of mono-component fibers of the upper layer. The denier of the bicomponent fibers of the lower layer is between 4 and 10 dtx.

It is respectfully submitted that a careful reading of the Barge reference actually demonstrates that the reference directs the artisan away from the composition of the present invention as set forth in claim 1. Turning first to column 6, lines 29-38 of Barge, it can be seen that the reference teaches a support layer whereas the upper layer of claim 1, typically having fibers with a fineness in the range of 1 to 7, preferably 1.7 to 3.3 dtx. The reference further teaches that the bulky layer (considered analogous to the lower layer in claim 1) includes bicomponent fibers "that will typically have a similar fineness, i.e., in the range of 1 to 7 dtx, preferably 1.7 to 3.3 dtx". Thus, it can be seen that the Barge reference teaches the use of bicomponent fibers of similar fineness in both the upper and lower layer. In contrast, the present invention as set forth in claim 1

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 8 of 14

teaches the use of mono and bicomponent fibers of a first fineness of at most 3.5 dtx. The lower layer has a different fineness characterized by the bicomponent fibers having a fineness between 4 and 10 dtx.

It should also be noted that the Barge reference, at column 6, lines 39-46, states:

The percentage of binder fibres in the bulky layer(s) (analogous to the lower layer in the present invention) will typically be in the range of 10-65 % by weight, e.g. 15-50 % by weight, more typically 20-40 % by weight, such as about 25-35 % by weight, based on the total weight of the bulky layer(s). In certain cases, however, one or more bulky layer may consist essentially of bicomponent fibres.

It is respectfully submitted that this section, as well as the Barge reference taken in its entirety cannot be employed to teach the use of at least 40 percent of bicomponent fibers in the lower layer as set forth in claim 1. It submitted that extraction of such a teaching would require reliance upon the present disclosure and would constitute an improper use of hindsight.

The Barge reference also fails to teach or suggest that the denier of bicomponent fibers in the lower layer is between 4 and 10 dtx. At best, the Barge reference teaches, at column 6, lines 63-64, a second bulky layer designed primarily for distribution of liquid within the layer. The bulky layer will typically comprise undefined fibers in the range of 5 to 12 dtx. It is submitted that there is no teaching or suggestion of the specific requirement of claim 1 of the bicomponent fibers of the lower layer be in the range of 4 to 10 dtx.

It is submitted that the Barge reference does not suggest, but rather leads away from, the use of bicomponent fibers in the support layer (considered analogous to our upper layer). Furthermore, none of the examples set forth at columns 16 to 20 employ bicomponent fibers in the support layer (analogous to the upper layer of claim 1). Where component fibers are discussed and employed in

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 9 of 14

the bulky layer (considered analogous to the lower layer in claim 1), these materials are PP/PE binder fibers of a denier of 1.7 dtx and are employed in amounts well below 20 percent. Only one single example (Example 3B) employs a PET/PE bicomponent fiber. Again, this fiber is employed at a percentage of 20 percent, which is well below the limitation set forth in claim 1 of at least 40 percent. Thus, it is submitted that the Applicants' invention as set forth in claim 1 is not taught, anticipated, or rendered obvious by the Barge reference.

Claims 4-10 also stand rejected under 35 U.S.C. § 103(a) as being rendered obvious by the Barge reference. It is respectfully submitted that claims 4-10 depend either directly or indirectly from claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 4-10 is not taught, anticipated, or rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 1.

Claims 12-15 currently stand rejected under 35 U.S.C. § 103(a) as being rendered obvious by the Barge reference. It is respectfully submitted the Barge reference fails to teach or suggest the use of bicomponent fibers in the lower layer in which the denier of the sheet/core fiber is 5 to 8 dtx, 6 to 7 dtx, respectively, as set forth in claims 12 and 13. Thus, it is submitted that the Applicants' invention as set forth in claims 12 and 13 is not taught, anticipated or rendered obvious. Additionally, the Applicants' invention as set forth in claims 12-15 depends either directly or indirectly from claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 12-15 is not taught, anticipated, or rendered obvious by the Barge reference for the reasons discussed previously in conjunction with claim 1.

Claims 2 and 3 currently stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Newkirk in view of Winebarger. The Examiner indicates that Newkirk discloses pattern bonding using air but fails to disclose creating a



Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 10 of 14

textured pattern through calendering. The Winebarger reference is cited as teaching that a softer cover stock may be achieved by calendering the nonwoven material and creating a pattern with a bond area of 7.5 to 30 percent (Weinberger, column 5, lines 13-16). The Examiner indicates that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to create a textured pattern by calendering the covered stock of Newkirk in order to create a softer material as taught by Winebarger. Claims 2 and 3 depend from independent claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 2 and 3 is not taught, anticipated, or rendered obvious by the cited references for the reasons discussed previously in conjunction with claim 1.

Claims 2 and 3 also stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Barge in view of Winebarger. Claims 2 and 3 depend from independent claim 1 to contain all of the limitations found therein. It is submitted that claims 2 and 3 are not taught, anticipated, or rendered obvious by Barge in view of Winebarger for the reasons discussed previously in conjunction with claim 1 relative to the Barge reference. Thus, it is submitted that the applicants' invention as set forth in claims 2 and 3 is not taught, anticipated, or rendered obvious by these references.

Claim 6 currently stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Newkirk in view of Barge. The Examiner indicates that the Newkirk reference fails to disclose treating the upper layer with a hydrophillic finish. The Barge reference is cited as disclosing that cover stock fabrics are preferably treated with a hydrophillic agent in order to better acquire and distribute aqueous liquids such as urine. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the top sheet of Newkirk with a hydrophillic finish in order to create a cover stock that can better acquire and distribute aqueous liquids as taught by

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 11 of 14

Barge et al. Claim 6 depends either directly or indirectly from claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claim 6 is not taught, anticipated, or rendered obvious by the cited references for the reasons discussed previously in conjunction with claim 1 relative to both Newkirk and Barge.

Claim 11 currently stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Newkirk in view of Lloyd. The Examiner indicates that Newkirk does not disclose that the lower layer contains eccentric core/sheath fibers. Lloyd is cited as teaching that bicomponent core/sheath fibers having eccentric cores are preferably used in absorbent articles to provide a lower density structure due to the greater tendency of such fibers to take on a curled shape. The Examiner indicates that it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use eccentric sheet/core fibers in the absorbent article of Newkirk in order to provide a lower density structure for acquiring and distributing fluids as taught by Lloyd et al. Claim 11 is also rejected under 35 U.S.C. § 103(a) as being unpatentable over Barge et al. in view of Lloyd using a similar analysis. Claim 11 depends either directly or indirectly from Claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claim 11 is not taught, anticipated, or rendered obvious by the cited references for the reasons discussed previously in conjunction with claim 1.

Claims 16-19 currently stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Newkirk in view of Hermann et al. The Examiner indicates that the Newkirk reference discloses the limitations of the fluid-permeable layer as set forth above, however, Newkirk fails to disclose the structure for the absorbent core or retaining layer. Hermann et al. is cited as disclosing an absorbent core material having multiple layers. The Examiner concludes that it would have been obvious to a person having ordinary skill in the art at the time the

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 12 of 14

invention was made to use the absorbent core of Hermann et al. in the product of Newkirk in order to provide an absorbent product with sufficient acquisition and distribution properties.

The Applicants' invention as set forth in claim 16 is directed to an absorbent hygienic article having a fluid-tight layer that is not in physical contact with the body during use. The device has a retaining element and a fluid-permeable layer provided on the side of the retaining element in physical contact with the body. The retaining element comprises one layer of intra-linked cellulose fibers with a fluid-retention value as defined. The layer of intra-linked cellulose fibers contains 0.15 percent by weight superabsorbent polymer materials. The fluid-permeable layer is provided on the side of the retaining element in physical contact with the body and is at least double-layered with an upper layer consisting of fibers with a denier of at least 3.5 dtx while the lower layer of the double layer comprises a bicomponent fiber with a denier of 4 to 10 dtx whose higher melting component is made of PET.

As indicted previously, the Newkirk reference fails to teach or disclose the use of bicomponent fibers with a denier of 4 to 10. To the contrary, the Newkirk reference teaches the use of bicomponent fibers having deniers significantly lower as explained previously. Thus, it is submitted that the Applicants' invention as set forth in claim 16 is not taught, anticipated or rendered obvious by the Newkirk reference taken alone.

The Hermann reference discloses an absorbent body placed below a pervious nonwoven cover. The absorbent body 16 comprises an upper body side sheet 18 and a lower sheet 22 positioned below the upper side sheet that contact each other at boundary 20. The upper layer 18 comprises an upper sublayer 26 and a lower sublayer 28. The upper sublayer 26 consists of intralinked cellulose fibers as disclosed in EP 0 252 650 B1. Such cellulose fibers do not provide for storage of the liquid. The liquid is received within capillaries between the fibers

Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 13 of 14

and is distributed within the sublayer 26. The sublayer 26 is referred to as distribution layer 26. The lower sublayer 28 comprises regular non-cross-linked cellulose fibers that exhibit substantial higher absorption than intra-cross-linked cellulose fibers. The lower sublayer 28 comprises a super absorbent material in the form of particles 29. The content of the superabsorbent material in the lower sublayer 28 is between 10 and 90 weight percent and preferably between 30 and 50 weight percent. (See column 2, lines 66 to column 3, line 17 of Hermann.) The lower layer 22 consists essentially of non-cross-linked cellulose fibers (column 3, lines 67-68).

It is respectfully submitted that the Hermann reference discloses a specific absorbent body having a layered construction in which the upper sublayer 26 consists of 100 percent intra-cross-linked cellulose fibers. The reference lacks any teaching of the composite structure disclosed in the present invention. Due to the specific absorbent body disclosed in Herman providing for acquisition and distribution properties, the need for use of a composite top sheet as disclosed in claim 16 is obviated. Thus, the Hermann reference actually teaches away from the materials disclosed in Newkirk, and, more specifically, the invention set forth in claim 16.

Claims 17-19 also stand rejected under 35 U.S.C. § 103(a) as being rendered obvious by Newkirk in view of Hermann. Claims 17-19 depend from independent claim 16 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 17-19 is not taught, anticipated or rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 16.

In summary, discussion has been presented as to why the Applicants' invention as set forth in claims 1-19 is not taught, anticipated, or rendered obvious by the various references. As a result of this discussion, it is

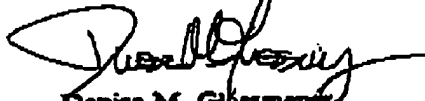
Application Serial No.  
Date September 8, 2004  
Reply to Office Action dated 06-09-2004

Page 14 of 14

submitted that the Applicants' invention as set forth in claims 1-19 is in a condition suitable for allowance. Notice of allowance is, therefore, respectfully requested.

Respectfully submitted,

YOUNG &amp; BASILE, P.C.



Denise M. Glassmeyer  
Attorney for Applicant(s)  
Registration No. 31,831  
(248) 649-3333

3001 West Big Beaver Rd., Suite 624  
Troy, Michigan 48084-3107

Dated: September 8, 2004  
DMG/ljo